

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:  
Gary T. ROCHELLE  
John CULLINANE

Serial No.: 10/551,834

Filed: October 3, 2005

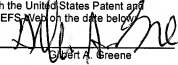
For: POLYAMINE/ALKALI SALT BLENDS  
FOR CARBON DIOXIDE REMOVAL  
FROM GAS STREAMS

Group Art Unit: 1724

Examiner: Unknown

Atty. Dkt. No.: UTSB:719US

Confirmation No.: 4223

<b>CERTIFICATE OF ELECTRONIC TRANSMISSION</b>	
I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office via EFS-Web on the date below.	
July 19, 2007	
Date	Robert A. Greene

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.

In accordance with 37 C.F.R. §§ 1.97(g), (h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R. § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to these materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/UTSB:719US.

Applicants respectfully request that the listed documents be made of record in the present case.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gilbert A. Greene".

Gilbert A. Greene  
Reg. No. 48,366  
Attorney for Applicants

FULBRIGHT & JAWORSKI L.L.P.  
600 Congress Avenue, Suite 2400  
Austin, Texas 78701  
(512) 474-5201

Date: July 19, 2007

Form PTO-1449 (modified)		Atty. Docket No.: UTSB:719US	Serial No.: 10/551,834
List of Patents and Publications for Applicant's  INFORMATION DISCLOSURE STATEMENT  (Use several sheets if necessary)		Applicant: Gary ROCHELLE John CULLINANE	
		Filing Date: October 3, 2005	Group: 1724
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

### U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
	A1	4,094,957	06/13/78	Sartori <i>et al.</i>	423	223	12/14/76
	A2	4,112,050	09/05/78	Sartori <i>et al.</i>	423	223	12/19/77
	A3	4,217,237	08/12/80	Sartori <i>et al.</i>	252	192	05/30/78
	A4	4,336,233	06/22/82	Appl <i>et al.</i>	423	228	08/13/80
	A5	4,581,209	04/08/86	Oswald <i>et al.</i>	423	223	10/03/83
	A6	5,853,680	12/29/98	Iijima <i>et al.</i>	423	220	07/10/96
	A7	6,036,931	03/14/00	Yoshida <i>et al.</i>	423	228	06/03/97
	A8	6,337,059	01/08/02	Schubert <i>et al.</i>	423	210	05/03/99
	A9	6,416,568	07/09/02	Wallace <i>et al.</i>	95	55	05/12/00
	A10	6,436,174	08/20/02	Grossmann <i>et al.</i>	95	191	12/29/00

### Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Language

### Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C1	Bishnoi and Rochelle, "Absorption of carbon dioxide into aqueous piperazine: reaction kinetics, mass transfer and solubility," <i>Chemical Engineering Science</i> , 55:5531-5543, 2000.
	C2	Bishnoi, "Carbon dioxide absorption and solution equilibrium in piperazine activated methyl-diethanolamine," <i>Doctor of Philosophy Dissertation</i> , The University of Texas at Austin, 2000.
	C3	Bocard and Mayland, "New charts for hot carbonate process," <i>Hydroc. Proc. &amp; Pet. Ref.</i> , 41:128, 1962.

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DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

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U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>		Other Art <i>See Page 1</i>

### Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C4	Cullinane and Rochelle, "Aqueous potassium carbonate and piperazine mixtures for CO <sub>2</sub> removal from flue gas," <i>Research Review Meeting</i> , October 23, 2002.
	C5	Cullinane and Rochelle, "Carbon dioxide absorption with aqueous potassium carbonate promoted by piperazine," <i>Greenhouse Gas Treating Conference 6</i> , September 31 to October 4, 2002.
	C6	Cullinane, "Carbon dioxide absorption in aqueous mixtures of potassium carbonate and piperazine," <i>M.S. Thesis</i> , The University of Texas at Austin, May 2002
	C7	Dang, "CO <sub>2</sub> absorption rate and solubility in monoethanolamine/piperazine/water," <i>Master of Science Thesis</i> , The University of Texas at Austin, 2001.
	C8	Freguia and Rochelle, "Modeling of CO <sub>2</sub> absorption/stripping process with MEA," <i>SRP Meeting</i> , April 16, 2002.
	C9	Goff and Rochelle, "Oxidative degradation of aqueous monoethanolamine in CO <sub>2</sub> capture systems under absorber conditions," <i>Greenhouse Gas Treating Conference 6</i> , October 1, 2002.
	C10	Pacheco <i>et al.</i> , "CO <sub>2</sub> absorption into aqueous mixtures of diglycolamine and methyl-diethanolamine," <i>Chemical Engineering Science</i> , 55:5125-5140, 2000.
	C11	Rochelle and Cullinane, "K <sub>2</sub> CO <sub>3</sub> /piperazine solutions for CO <sub>2</sub> removal from flue gas," <i>Separations Research Program Research Review</i> , April 17, 2001.
	C12	Rochelle and Cullinane, "Piperazine promoted K <sub>2</sub> CO <sub>3</sub> solutions for CO <sub>2</sub> capture from flue gas," <i>Separations Research Program Research Review</i> , October 9, 2001.
	C13	Rochelle and Seibert, "Carbon dioxide capture by absorption with potassium carbonate," <i>Proposal to the Department of Energy</i> , submitted July 23, 2001, granted on December 9, 2002.
	C14	Rochelle <i>et al.</i> , "Research results for CO <sub>2</sub> capture from flue gas by aqueous absorption/stripping," <i>Laurence Reid Gas Conditioning Conference</i> , February 25-27, 2002.
	C15	Tosh <i>et al.</i> , "Equilibrium study of the system potassium carbonate, potassium bicarbonate, carbon dioxide, and water," <i>USBM RI</i> , 5484, 1959.
	C16	Tseng <i>et al.</i> , "Carbon dioxide absorption into promoted carbonate solutions," <i>AIChE J.</i> , 34:922-931, 1988.

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